

An Analysis of the Problems in the Cooperation of Combining Learning with Research and Production in Jilin Province

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Abstract

Judging from the surface of Jilin province manufacture-learning-research cooperation has obtained certain cooperation achievements, the manufacture-learning-research cooperation form varied as well. However, prominent contradiction in Jilin province manufacture-learning-research cooperation still exists, namely technology resources superiority and the lagging economic development formed the technology waste of resources and enterprise unmet needs, highly coordinated phenomenon in Jilin province. This paper mainly analyses the the main problems of manufacture-learning-research cooperation in Jilin province.

Keywords

Jilin Province; Production-study-research; Problems Analysis

Introduction

The tasks of scientific research to local scientific research institutes are annually assigned by ministries and commissions attached to central government. The universities and colleges in each province spare no efforts to apply for the projects sponsored by central government finance, including the "863" Project, the National Science and Technology Programs, the National Natural Science Fund and so on. However, it is lack of the fund sponsored by the enterprises in Jilin Province in the realm of combining learning with research and production. Meanwhile, the universities and colleges in Jilin Province show little interest to the scientific research fund sponsored by central government, causing the contradictory situation that the quantity of local scientific research increases; nevertheless, the social demand for the research funding decreases. Some other problems are illustrated as follows.

Market Obstacles for the Cooperation between Learning and Production

The cooperation between Learning and Production in Jilin Province attaches no importance to market value and fails to establish industrialized production. A great deal of achievements in scientific research don't reach advance level in market and the after-sale service doesn't meet requirements for some products containing high technological value. Therefore, those local scientific research institutes and universities in Jilin just show great concern to their academic value and status, instead of market value. Inevitably, the effective achievements in Jilin are in short supply and some of the scientific research projects on low level are applied in duplication. With the restructuring of some scientific institutions into enterprises, the cooperation of combining learning with research and production gradually transmits to market.

Low Level of the Cooperation of Combining Learning with Research and Production

The successful models of the cooperation of combining learning with research and production are technical transformation, technical consultation, commissioned development, joint development, co-construct scientific research base, and establish scientific research entity. However, on so low level those models stay that the enterprises are deficient in far-reaching strategy and mainly chase after some projects featured with "short, stable, fast" (business cycle is short, business is stable and in low risks, inward flood of capital is fast).

1) In the current time, the cooperation of combining learning with research and production centers on the

acquisition of resource, namely, universities and research institutes yearn for the fund sponsored by enterprises, but enterprises lay great emphasis on their technological support. The cooperation form is loose or random because they have a temporary collaboration in order to get the project sponsored by government.

2) Most of the cooperation is based on one project or one technology. The accomplishment of the project means the end of the mutual cooperation. This kind of collaboration established on project cannot meet the demand of technological innovation marked with big risks and long time. Enterprises lack of technology, which hinders the development of the industry. This type of scientific research and its commercial application increase the cost of production.

Lack of Drive in the Cooperation of Combining Learning with Research and Production

1) Most of the enterprises in the cooperation still take the development of extensive form as their strategy and lack of the desire for independent innovation. They stress import rather than the absorption of technology. A large portion of the enterprises in insufficient demand of innovative and high technology, never innovates or develops technology. However, minority of the enterprises do the opposite. Survey on the expenses for the enterprises innovation from 2007 to 2009, it is found that the expense for exterior research and development takes 3.4%, but 53.8% of the total expense is used to purchase software and equipments.

2) Universities and scientific research institutions seldom take commercial application into consideration and possess little passionate desire to cooperate with enterprises. They focus on the presence of academic papers and the acquisition of governmental award on their research achievements, on which their promotion and development mainly depend, and they do not mind how much their scientific achievements can be converted into products.

3) The information of the parties in the cooperation is not symmetrical, which causes all the parties not to make their common interest very clear. Thus it is very difficult to determine the value of the research achievements and operate the transmission of the achievements to product. In some circumstances technological transfer is not conducted thoroughly; what is worse, the mechanism of the governmental supervision and coordination is not complete, which

severely influences the cooperation initiatives.

Technological Innovation and Disconnection of Industry Chain of Cooperation of Production, Study and Research (CPSR)

In the Process of CPSR, the Enterprises Ignore the Issue of Technological Provision of Scientific and Technological Fruits

In the process of CPSR, the ultimate aim of the enterprise's introduction of scientific and technological fruits is to improve the R&D, lower the risk, reduce the fee of enterprise's R&D and transform the cost. The enterprise that chooses the fitful scientific results will consider the market requirement. However, in practice, the enterprise's CPSR ignores the issue of technological provision of scientific and technological fruits and does harm to the transformation of scientific and technological fruits.

1) The enterprise only wants to introduce the production line and the whole set of production equipment. The technology only stays the level of introduction and the level of second innovation is relatively lower without innovation. Thus, there is no development on the aspects of both staff and their abilities, which will dampen the passion of scientific fruits transformation and damage economic profit.

2) The gap of technology between enterprise and scientific units is large. The enterprise simply requires the scientific units to send the scientific and technological fruits to the production line directly, increasing the cost of transformation cooperation considerably. Besides, enterprise is in charge of the training of all the staff and technology support. The CPSR make the scientific units shoulder more risks.

3) The enterprise's knowledge of market as well as technology at home and abroad is not adequate. Meanwhile, the enterprise blindly believes overseas scientific fruits and technology. Many domestic scientific and technological fruits having played a leading role in the world, are more suitable for the productivity and market requirement. Although compared with overseas scientific and technological fruits, some domestic counterparts still lag behind, the operation cost is relatively lower. But these fruits are not recognized by the enterprise.

4) Many enterprises' economic power is relatively weak and only attach the importance to primitive fund accumulation. Thus they are not able to shoulder the

risks brought by market and technological innovation.

The Organizational Form of CPSR Cannot Catch up with the Requirement of Industry Technological Innovation

1) The organizational form of CPSR in Jilin province cannot catch up with the requirement of industry technological innovation. The major industry innovation requires large investment and enormous risks, but the enterprises in Jilin province have the common problem of weak ability of innovation and poor accumulation. So it is required that many enterprises invest and shoulder the risks jointly, and establish the effective and long-term cooperative organization mechanism.

2) There are many cooperative relationships based on a certain cooperative program, while there are few long-term and persistent cooperative relationship aiming at mutual technological and innovative requirement of many enterprises. Most cooperations are temporary project group based on university and scientific units or the one-to-one commission project of enterprises to universities or scientific units. In this way, there are loose cooperative organization forms and many oriented cooperative agreements. It is difficult to perform the contract and there is still obscure on the responsibility and profit. Meanwhile, it lacks the guaranteed and long-term cooperative relationship and legal restriction. The CPSR in Jilin province lags behind and lacks distinguished innovation. The coordinated group of CPSR in Jilin province lacks the managerial methods.

3) There are a few integrated and innovative programs of CPSR which are hardly aimed at the whole set of innovative development and innovation. Most CPSR programs are to solve the enterprise's single technological problem. At the same time, there are few cross-industry, cross-subject and cross-field CPSR cooperative programs based on the enterprise's long-term prospect. Thus it is difficult to solve some basic and common technological problems, which seriously restricts the upgrade of industrial structure.

Conclusion the Government doesn't Give Full Play to Its Role in CPSR

The government doesn't give full play to its dominant role in CPSR, which can be shown in following aspects.

Lack a Series of Regulatory, Policy and Relevant Measures which can Promote the CPSR

The sound and efficient scientific regulations and

policies are important guarantees to promote and CPSR and scientific progress. The scientific legislature system of CPSR in Jilin province is not full-round and at the preliminary stage. Now it lacks assorted operative articles and sound system of operation and coordinated supervision. When the government makes the law, regulation and assorted plan, local characteristics, operation and specific situation are neglected, so does the local situation.

The Government is Lack of Enough Endeavors to Raise Funds in Various Channels for UNISPAR Cooperation

The invest channels for UNISPAR cooperation is unitary, which needs the government to fully function in financing. Currently, the shortage of finance has become the biggest factor for UNISPAR cooperation. The projects of UNISPAR cooperation, especially these high-tech R & D project, are featured with high risks, great funds required, low success rate, so the finance support plays an important role in high-tech R & D of UNISPAR cooperation. However, finance shortage exists in every aspects of the cooperation. University and research department have limitation on research cost and meanwhile Enterprises are faced with too much pressure of high risks brought by high-tech industry. Although, bank and other finance organizations have made creations on their service mode, such as using Intellectual property rights pledge to backup UNISPAR cooperation projects, all those ways are far from satisfying the funding needs in the innovation progress of UNISPAR cooperation. Single financing channel become an obstacle in the UNISPAR innovation progress.

The Guidance Function of Government Resources Allocation for UNISPAR should be Strengthened

The state has published several management methods on scientific plan and there are principal regulations to support the UNISPAR cooperation, but featured with inadequate implementation and weak interoperability. The projects particularly backed by the government are short of examination and verified standards with obvious guidance. The support ways and conditions should be improved and clarified. So far, the combination of most UNISPAR projects is just temporarily formed to apply the projects, which becomes a common phenomenon and several significant projects needs huge organization and coordination work.

The Evaluation and Encouragement Methods of UNISPAR Combination Guided by the Government should be Improved

The parties in the UNISPAR have no clear position for the evaluation and encouragement methods, and the research departments and universities still take science research as an evaluation standard for titles evaluation and consider less for the economic and social benefits of these scientific R & D achievements which are the prominent issue occurring in the progress of UNISPAR and needed to be solved urgently. The universities and R&D departments are lack of reasonable guidance and category management for the evaluation standards of Basic research, applied research and scientific achievements transfer, and take the thesis published and academic theory as standards, which affects the initiative, enthusiasm and persistence of the scientific research colleague participating in the UNISAPR. Although some scientific technology evaluation and management methods have been published, they still need to be strengthened.

Conclusion

Jilin province confronts the dilemma that conflict and disproportion occur between the economic development lag and science and education resources advantage. Under the new situation that the University-industry-Science-Implement combination constructions are advocated by the nation, the way Jilin province can raise area innovative ability and effectively promote UNISPAR cooperation to achieve the fast and good economic development is in need. With general situation of scientific and technological development around the world and fierce international competition, Jilin province should strengthen UNISPAR cooperation in order to enable science and technology to play supporting and leading role in economic and social development in Jilin province. To seize new opportunity for science and technology revolution and industrial revolution, to realize the development of industry value chain from the low end to high end as well as to win the initial rights of future developments, the competitiveness of Jilin Province should be improved.

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